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MONTHLY NOTICES

OF THE

ROYAL ASTRONOMICAL SOCIETY.

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E. B. Knobel, Esq., President, in the Chair.

Charles Anthony, jun., M.Inst.C.E., Casilla 1045, Buenos Aires, Argentine Republic ;
Henry Osmund Barnard, Superintendent, Trigonometrical Surveys, Ceylon ;
Archibald Young Gipps Campbell, I.C.S., Nandiyal Railway Station P.O., Kurnool District, South India ;
Charles Rundle Davidson, Royal Observatory, and 41 Park Street, Greenwich, S.E. ;
Frank C. Dumat, Johannesburg, Transvaal, South Africa ;
Ambrose T. Flagg, M.A., Chapel House, Westoe, South Shields ;
Walter Heath, M.A., Redcott, Cobham, Surrey ;
John Charles William Herschel, B.A. Oxon, St. John's College, Cambridge, and Lawn Upton, Littlemore, near Oxford ;
James Netherclift Jutsum, Cardiff Nautical Academy, 47 Fitzhamon Embankment, Cardiff, South Wales ;
Captain Joseph W. Martyr, 1 The Glen, South Road, Forest Hill, S.E. ;
Alfred Ernest Moore, B.A., B.Sc. (Lond.), St. John's College, Battersea, S.W. ;
Thomas Marginson Nightingale, B.Sc. (Vict.), 375 Bridgman Street, Bolton, Lancashire ; and
Richard Welford, M.A., J.P., Thornfield, Gosforth, near Newcastle-on-Tyne,

were balloted for and duly elected Fellows of the Society.

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The following candidates were proposed for election as Fellows of the Society, the names of the proposers from personal knowledge being appended :—

Robert William Chapman, M.A., B.C.E., Lecturer on Engineering and Physical Science in the University, Adelaide, South Australia (proposed by Sir C. Todd) ; and

Charles J. Isaacs, Head of the Upper Nautical School, Greenwich, S.E. (proposed by Thomas Lewis).

Fifty-three presents were announced as having been received since the last meeting, including, amongst others :—

Greenwich Second Ten-year Catalogue of 6892 stars for the epoch 1890·0, presented by the Observatory ; Series of twenty-six Charts of Borneo, Sumatra, &c., for the use of observers of the total solar eclipse of May 1901, presented by Professor Bakhuyzen.

On mechanically compensating the rotation of the field of a Siderostat. By H. H. Turner, D.Sc., F.R.S., Savilian Professor.

1. In the *Astrophysical Journal* for March 1900, M. Cornu has given an elegant investigation of the rotation of the siderostat field. To the geometry of his paper little or nothing can be added ; but he has left untouched the question of any mechanical compensation of the variable rotation described, of which I propose to treat in the present note. Some simple link-work arrangements are suggested which it is hoped may be found to solve the problem of compensation practically.

2. Let P (in fig. 1) denote the pole of the heavens ; T the direction in which the telescope is directed, looking from mirror through the OG to the eye end ; and draw the meridian PT, which is not necessarily the meridian of the zenith but that of the telescope.

Consider what happens as a star S passes from upper culmination (on the *telescope* meridian) at S_1 to lower culmination at S_2. If the siderostat reflects its image in the constant direction T, then at upper culmination the normal to the mirror is directed towards N_1 where N_1 bisects the arc TS_1. The pole P will thus be reflected to R_1 *below* T ; and since $PN_1 = N_1R_1$, we have $TR_1 = PS_1$. Similarly at lower culmination the pole is reflected to R_2. And it is easily seen geometrically, as is shown in

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